

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions and listings:

1. (currently amended): A method of generating an immune response in a subject, comprising mucosally administering to target cells of said subject a ~~first~~ replication-defective gene delivery vehicle comprising a polynucleotide encoding at least one antigen ~~or modified form thereof~~, wherein said ~~first~~ replication-defective gene delivery vehicle is administered mucosally according to a multiple dose schedule which comprises a first course of administration comprising multiple doses followed by a second course of administration.
2. (currently amended): The method of claim 1, wherein ~~the~~ one or more mucosal administrations ~~is~~ are intranasal.
3. (currently amended): The method of claim 1, wherein ~~the~~ one or more mucosal administrations ~~is~~ are intrarectal.
4. (currently amended): The method of claim 1, wherein ~~the~~ one or more mucosal administrations ~~is~~ are intravaginal.
5. (currently amended): The method of claim 1, wherein ~~the~~ at least one of said antigens is derived from a sexually transmitted pathogen.
6. (withdrawn): The method of claim 5, wherein the sexually transmitted pathogen is a bacteria.
7. (withdrawn): The method of claim 6, wherein the bacteria is selected from the group consisting of gonorrhea, chlamydia and syphilis.
8. (original): The method of claim 5, wherein the sexually transmitted pathogen is a virus.

9. (original): The method of claim 8, wherein the virus is selected from the group consisting of HIV, HBV, HSV, HCV and HPV.

10. (original): The method of claim 9, wherein the virus is HIV-1.

11. (original): The method of claim 1, wherein the gene delivery vehicle is selected from the group consisting of a nonviral vector, a viral vector, a particulate carrier and a liposome preparation.

12. (original): The method of claim 11, wherein the gene delivery vehicle is a viral vector selected from the group consisting of a retroviral vector, an adenoviral vector, a poxvirus vector, a picornavirus vector and an alphavirus vector.

13. (original): The method of claim 12, wherein the alphavirus vector is a Sindbis vector.

14. (original): The method of claim 12, wherein said alphavirus vector is selected from the group consisting of Semliki Forest virus, Venezuelan equine encephalitis virus and Ross River virus vector.

15. (currently amended): The method of claim 12, wherein said alphavirus vector comprises ~~elements~~ sequences from two or more alphaviruses.

16. (original): The method of claim 12, wherein the alphavirus vector is delivered to antigen presenting cells.

17. (original): The method of claim 16, wherein the antigen presenting cells are dendritic cells.

18. (original): The method of claim 1, wherein the target cells are infected *in vivo*.

19. (currently amended): The method of claim 1, wherein ~~the antigen elicits~~ an HLA class I-restricted immune response is elicited in the subject.

20. (currently amended): The method of claim 19, wherein ~~the antigen further elicits~~ an HLA Class II-restricted immune response is elicited in the subject.

21. (currently amended): The method of claim 1, further including, prior or subsequent to the step of administering to target cells, introducing into target cells of the subject a nucleic acid molecule which encodes either Class I or Class II MHC protein, or combinations thereof, or a protein selected from the group consisting of CD3, ICAM-1, LFA-3 or analogues thereof.

22. (withdrawn and currently amended): The method of claim 1, further comprising the step of administering at least one second gene delivery vehicle, said second gene delivery vehicle comprising polynucleotides encoding at least one second antigen ~~or modified form thereof~~ or an immunomodulatory factor.

23. (withdrawn): The method of claim 22, wherein the second gene delivery vehicle is administered mucosally.

24. (withdrawn): The method of claim 22, wherein the second gene delivery vehicle is administered non-mucosally.

25. (withdrawn): The method of claim 1, further comprising the step of administering one or polypeptides to the subject.

26. (withdrawn and currently amended): The method of claim 25, wherein the polypeptides comprise at least one second antigen ~~or modified form thereof~~.

27. (withdrawn): The method of claim 25, wherein the polypeptides comprise an immunomodulatory factor.

28. (withdrawn): The method of claim 25, wherein at least one of the polypeptides is administered mucosally.

29. (previously presented): The method of claim 13, wherein said alphavirus vector is contained in an alphavirus replicon particle.

30. (previously presented): The method of claim 15, wherein said alphavirus vector is contained in an alphavirus replicon particle.

31 to 32. (canceled)

33. (currently amended): The method of claim 1, ~~further comprising the step of administering subsequent multiple doses of the first replication defective gene delivery vehicle at subsequent time intervals to maintain the immune response in the subject~~ wherein said second course of administration comprises multiple doses.

34. (canceled)